CLAIMS

Now, therefore, the following is claimed:

1.   A communication system, comprising:

a forward error correction (FEC) module configured to receive data and to define FEC code words based on the received data;

a first transceiver coupled to a first communication line;

a second transceiver coupled to a second communication line; and

logic configured to selectively enable the FEC module to implement a desired FEC scheme based on an estimated error rate associated with the first communication line and an estimated error rate associated with the second communication line.

2.   The communication system of claim 1, wherein the first transceiver is configured to transmit at least a portion of the data to a remote receiving system, and wherein the logic is configured to enable the second transceiver to transmit a portion of the data to the remote receiving system if the FEC module is enabled to implement the desired FEC scheme.

3.   The communication system of claim 1, wherein the control logic is further configured to selectively enable the first and second transceivers to communicate the received data to the receiving system based on the estimated error rates.

4.   The communication system of claim 1, wherein the system is configured to operate in a first mode of operation and a second mode of operation based on the estimated error rates, wherein the logic, in the first mode of operation, is configured to disable the FEC module from implementing the desired FEC scheme and to disable the second transceiver from communicating payload data to the receiving system, and wherein the control logic, in the second mode of operation, is configured to enable the FEC module to implement the desired FEC scheme, thereby causing the FEC module to define a plurality of FEC code words based on the payload data, and to enable the first and second transceivers to communicate the plurality of FEC code words to the receiving system.

5.   The communication system of claim 1, wherein the error rate associated with the first communication line is independent of the desired FEC scheme, and wherein the error rate associated with the second communication line is based on the desired FEC scheme.

6.   A communication system, comprising:

a forward error correction (FEC) module;

a first transceiver coupled to a first communication line;

a second transceiver coupled to a second communication line; and

logic configured to enable the first transceiver to communicate data from a data stream over the first communication line to a remote receiving system in a first mode of operation, the logic further configured, in a second mode of operation, to enable the FEC module to encode data from the data stream according to a desired FEC scheme and to enable the first and second transceivers to communicate the encoded data over the first and second communication lines, the logic further configured to dynamically switch between the modes of operation based on an estimated error rate associated with at least one of the communication lines, wherein the logic is configured to disable the FEC module from encoding, according to the desired FEC scheme, the data communicated by the first transceiver in the first mode of operation.

7.   The communication system of claim 6, wherein the estimated error rate is associated with the first mode of operation, the logic configured to determine an error rate associated with at least one of the communication lines and the second mode of operation, the logic further configured to perform a comparison between the error rates and to determine, based on the comparison, whether to enable the FEC module to encode data from the data stream according to the desired FEC scheme.

8.   The communication system of claim 6, wherein the estimated error rate is independent of the desired FEC scheme, the logic configured to determine a first value indicative of the estimated error rate and to determine a second value indicative of an estimated error rate associated with each of the communication lines, the logic further configured to perform a comparison between the first and second values and to select one of the modes of operation based on the comparison.

9.   The communication system of claim 8, wherein the estimated error rate associated with each of the communication lines is based on the desired FEC scheme.

10.   A transmission system for communicating payload data to a remote receiving system, comprising:

a forward error correction (FEC) module configured to define FEC code words based on the payload data according to a particular FEC scheme;

a plurality of transceivers; and

logic configured to determine a first value indicative of a first error rate associated with communicating the payload data from at least one of the transceivers to the remote receiving system, the logic configured to determine a second value indicative of a second error rate associated with communicating the FEC code words from each of the transceivers to the remote receiving system, the logic further configured to perform a comparison between the first and second values and to selectively enable the FEC module to implement the particular FEC scheme for the payload data based on the comparison.

11.   The transmission system of claim 10, wherein the logic is further configured to selectively enable at least one of the transceivers to communicate the payload data based on the comparison.

12.   The transmission system of claim 10, wherein the first error rate is associated with communicating the payload data independent of the particular FEC scheme from the at least one transceiver to the receiving system.

13.   A method for communicating over first and second communication lines between a transmission system and a receiving system that is remotely located from the transmission system, the method comprising the steps of:

communicating payload data over the first and second communication lines;

encoding the payload data according to a particular forward error correction (FEC) scheme;

determining an error rate associated with at least one of the communication lines; and

disabling communication of the payload data over the one communication line and disabling the encoding step when the error rate indicates a degraded performance of the one communication line.

14.   The method of claim 13, wherein the error rate is independent of the particular FEC scheme.

15.   The method of claim 14, further comprising the steps of:

detecting an error rate associated with each of the communication lines and based on the particular FEC scheme; and

comparing the error rates,

wherein the disabling step is based on the comparing step.

16.   A method for communicating over a plurality of communication lines between a transmission system and a receiving system that is remotely located from the transmission system, the method comprising the steps of:

communicating payload data over at least one of the communication lines;

determining a first error rate associated with communicating the payload data over at least one of the communication lines without using the desired FEC scheme;

determining a second error rate associated with communicating the payload data over each of the communication lines using the desired FEC scheme;

encoding the payload data according to the desired FEC scheme; and

selectively enabling the encoding step based on the first and second error rates.

17.   The method of claim 16, further comprising the step of selectively enabling communication of the payload data over at least one of the communication lines based on the first and second error rates.

18.   The method of claim 16, wherein the selectively enabling step comprises the step of enabling the encoding step if the second error rate is less than the first error rate.

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19.   A method for communicating payload data over a plurality of communication lines between a transmission system and a receiving system that is remotely located from the transmission system, the method comprising the steps of:

transmitting the payload data, in a first mode of operation, over at least one but less than all of the communication lines without using a particular FEC scheme;

transmitting the payload data, in a second mode of operation, over each of the communication lines using the particular FEC scheme;

determining a first value indicative of a transmission error rate associated with the first mode of operation;

determining a second value indicative of a transmission error rate associated with the second mode of operation; and

selecting and implementing one of the modes of operation based on the first and second values.

20.   The method of claim 19, further comprising the steps of:

monitoring the transmission error rates; and

dynamically switching to the non-selected mode of operation based on the monitoring step.

21.   The method of claim 19, further comprising the step of comparing the first and second values, wherein the selecting and implementing step is based on the comparing step.